cornerstone
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March 27, 2017

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Nonpoint Pollution Control
Mail Code 401-02B
PO Box 420
Trenton, NJ 08625

Attention: Eleanor Krukowski, Supervisor

Subject: Ringwood Mines/Landfill Superfund Site
Construction Stormwater Permit 5G3
Applicability Determination

Dear Ms. Krukowski:

The 5G3 – Construction Activity Stormwater General Permit (referred to herein as 5G3) provides in Section A.2. that a landfill may be considered eligible for coverage when a "…written determination is made by the Department that the permit requirements are sufficient to control the construction activities." The Department's 2017 Fact Sheet regarding the 5G3 coverage also states a landfill may be covered "…when a determination is made that the permit requirements will protect the quality of the waters of the State."

On the basis of the above, on behalf of Ford Motor Company (applicant), the purpose of this letter and attachments is to provide information for the Department's consideration of eligibility of the work proposed at the Ringwood Mines/Landfill Superfund Site for coverage under the 5G3 general construction permit. The Soil Erosion and Sediment Control Plan for the Site has been certified by the Hudson Essex Passaic Soil Conservation District (HEPSCD 251 ID Code #216-P-4379).

First, by way of background, the proposed project consists of remediation/closure of three separate former landfill areas known as the Cannon Mine Pit (CMP) of approximately 2.5 acres located at the end of Van Dunk Lane, the Peters Mine Pit (PMP) of approximately 3.5 acres located at the end of Peters Mine Road, and the O'Connor Disposal Area (OCDA) of approximately 11.5 acres located on Peters Mine Road just south of the PMP, all in the Borough of Ringwood, New Jersey. Wastes disposed of in these three areas was composed of predominantly inorganic materials such as cardboard and metal. Waste disposal ceased in 1971.

The remediation work is being performed under the Superfund program, and under the oversight of the USEPA and NJDEP. The remediation/closures include components of excavation, on-site placement, off-site disposal, grading, clean fill placement, and final engineered cap construction. Upon completion of the remediation/closures, the three areas will be vegetated per the certified soil erosion and sediment control plan, and also per a planting plan for restoration of wetlands, wetland transition areas, and riparian zones within the PMP area and OCDA. Within the PMP, there is also a component of possible excavation of waste materials below the groundwater table, in which dewatering will be performed. Dewatering waters will be treated via bag filters, cartridge filters and granular activated carbon prior to discharge to groundwater under a groundwater discharge permit by rule that has been submitted to the NJDEP under separate cover.

Consistent with the current provisions of the 5G3 that allow NJDEP discretion regarding permit eligibility for construction at landfills, the following information is provided for the NJDEP's assessment in making a determination of eligibility:

- As a part of monitoring that has been performed for over a decade, a recent, comprehensive groundwater monitoring event was performed at the Site in August 2016, and groundwater and surface water samples were collected and analyzed for organics (volatiles, semi-volatiles, and PCBs), metals, and cyanide. Tables 1 through 4 attached present the results of groundwater sampling in the CMP and OCDA areas, and these results are discussed below. Sampling locations are illustrated on the attached Figure 1.

- Analytical data for metals and cyanide from overburden groundwater (i.e., that reflects leaching from previously deposited waste materials and would also reflect runoff during construction) in the CMP Area and OCDA shows that the water quality meets the surface water quality standards for FW-2 streams at NJAC 7:9B, except for sporadic detections of naturally occurring minerals (e.g., iron, manganese, arsenic). These naturally occurring minerals will also be managed properly under the certified soil erosion and sediment control plan, as these circumstances are similar to any soil moving project because minerals are associated with the soils.

- Analytical data for organic compounds in overburden groundwater in the CMP Area and OCDA also show that the water quality meets the surface water quality standards with sporadic exceptions that are not associated with the Site. For example, pentachlorophenol was detected in several wells at low level, estimated concentrations, and this compound is also detected in two wells, upgradient from the CMP some 1,600 feet, indicating this is not Site related. The only other compounds detected above surface water quality standards are singular, low-level, estimated concentrations of hexachlorobenzene and MTBE, neither of

which is associated with the Site, and neither of which is detected in adjacent surface water (i.e., Park Brook, see below).

- As further indication of the absence of surface water quality impacts from the OCDA, surface water sampling data are attached as Tables 5 and 6, for two surface water sampling stations on Park Brook immediately adjacent to the OCDA. Park Brook is the local discharge point for overburden groundwater. As Tables 5 and 6 illustrate Park Brook water quality is consistent with FW-2 surface water quality standards with the exception of one detection of bis(2-ethylhexyl)phthalate, which is a ubiquitous compound and does not have a correlation to the Site. Of note, the CMP Area is not near a surface water body.

- The PMP area is a depression caused by settlement of underlying materials, and excavation and waste handling activities will occur within this depression and there will not be any stormwater runoff from the disturbed area when wastes are exposed. Stormwater runoff will occur only after the excavation area is brought above surrounding grade with clean fill soils, and then the provisions of the certified soil erosion and sediment control plan will be in effect.

We hope that the enclosed information is sufficient for the NJDEP to make a determination that permitting the proposed construction under the 5G3 general permit will be protective of surface water quality, with the certified soil erosion and sediment control plan in place.

Thank you for your consideration of this matter, and please contact us if you have questions or comments on the enclosed documentation.

Sincerely,

Cornerstone Engineering Group, LLC

Gary J. DiPippo
Professional Engineer
NJ License No. 24GE02646100

Enclosure: Tables, Figure

cc: B. Bussa, Ford
T. Green, Ford OGC.
J. Lagrotteria, LeClairRyan
D. Laguzza, LeClairRyan
K. Petrone, NJDEP
L. Dodge, Excel
R. Harwood, Excel
W. Monahan
C. Coslett, de maximis
J. Gowers, USEPA

TABLE 1
SUMMARY OF DETECTED ORGANIC COMPOUNDS IN GROUNDWATER
O'CONNOR DISPOSAL AREA (OCDA)
AUGUST 2016
RINGWOOD MINES/LANDFILL SUPERFUND SITE
COMPARISON TO FW2 SURFACE WATER STANDARDS

VOC Parameter	Result Unit	NJSWQS ug/l	OB-14B	OB-17
1,1-Dichloroethane	ug/l	N/A		0.7 J
Methyl tert-butyl ether	ug/l	70	0.27 J	
VOC Tentatively Identified Compounds (TICs)				
None				

SVOC Parameter	Result Unit	NJSWQS ug/l	OB-14B	OB-17	OB-24	OB-33	RW-16
1,4-Dioxane	ug/L	N/A	0.28	17.5			
Atrazine	ug/l	N/A					0.91 J
Bis(2-ethylhexyl) phthalate	ug/l	1.2				0.84 J	
Hexachlorobenzene	ug/l	0.00028			0.011 J		
SVOC Tentatively Identified Compounds (TICs)							
None							
PCBs							
None							

Note: J indicates estimated value

TABLE 2
SUMMARY OF METALS AND CYANIDE IN GROUNDWATER
O'CONNOR DISPOSAL AREA (OCDA)
AUGUST 2016
RINGWOOD MINES/LANDFILL SUPERFUND SITE
COMPARISON TO FW2 SURFACE WATER QUALITY STANDARDS

Parameter	Result Units	NJSWQS mg/l	OB-14A	OB-14B	OB-16	OB-17	OB-18	OB-18 DUP	OB-24	OB-28	OB-33
Aluminum Dissolved	mg/L	N/A	0.0135 U	0.0135 U	0.0135 U	0.0135 U	0.0135 U	0.0135 U	0.0135 U	0.0135 U	0.0135 U
Antimony Dissolved	mg/L	0.0056	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U
Arsenic Dissolved	mg/L	0.000017	0.00071 U	0.00089 J	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U
Barium Dissolved	mg/L	2	0.324	0.0411	0.0772	0.0105	0.007	0.0066	0.0335	0.0745	0.0173
Beryllium Dissolved	mg/L	N/A	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U
Cadmium Dissolved	mg/L	0.0034	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U
Calcium Dissolved	mg/L	N/A	122	101	139	92	38	38.1	94.6	139	13
Chromium Dissolved	mg/L	0.092	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Cobalt Dissolved	mg/L	N/A	0.0015 U	0.0015 U	0.0015 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0018 J
Copper Dissolved	mg/L	1.3	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.002 J
Cyanide, Total	mg/L	0.14	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron Dissolved	mg/L	N/A	2.98	0.0491 U	0.0491 U	0.0491 U	0.0491 U	0.0491 U	0.0491 U	0.0491 U	0.0491 U
Lead Dissolved	mg/L	0.005	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U
Magnesium Dissolved	mg/L	N/A	10.6	29.4	18.8	30.7	7.86	7.82	24.1	30.2	5.03
Manganese Dissolved	mg/L	N/A	1.29	1.61	3.11	0.309	0.003 U	0.003 U	0.04	3.47	0.0183
Mercury Dissolved	mg/L	0.00005	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U
Nickel Dissolved	mg/L	0.5	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Potassium Dissolved	mg/L	N/A	6	3.05	10.7	2.1	0.374	0.384	2.26	4.2	0.96
Selenium Dissolved	mg/L	0.17	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U
Silver Dissolved	mg/L	0.17	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Sodium Dissolved	mg/L	N/A	18.2	19.9	37.3	15.1	5	4.96	16.5	24.3	5.78
Thallium Dissolved	mg/L	0.00024	0.00031 U	0.00031 U	0.00031 U	0.00031 U	0.00031 U	0.00031 U	0.00031 U	0.00031 U	0.00031 U
Vanadium Dissolved	mg/L	N/A	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U
Zinc Dissolved	mg/L	7.4	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U

Note: U indicates non-detect, J indicates estimated value

TABLE 3
SUMMARY OF DETECTED ORGANIC COMPOUNDS IN GROUNDWATER
CANNON MINE PIT (CMP)
AUGUST 2016
RINGWOOD MINES/LANDFILL SUPERFUND SITE
COMPARISON TO FW2 SURFACE WATER STANDARDS

Parameter	Result Unit	NJSWQS ug/l	OB-02	OB-03	OB-04	OB-05	OB-06	OB-07	OB-12	OB-13
Acetone	ug/L	N/A		19						
Methyl tert-butyl ether	ug/L	0.07				0.17J				
1,4-Dioxane	ug/L	N/A			0.079 J	0.165		0.146 J		
Atrazine	ug/l	N/A								1.4 J
Pentachlorophenol	ug/l	0.00027		0.1 J	0.1 J	0.11 J	0.1 J	0.1 J		
Tentatively Identified Compounds (TICs)	None Detected									

Note: J indicates estimated value

TABLE 4
SUMMARY OF METALS AND CYANIDE IN GROUNDWATER
CANNON MINE PIT (CMP)
AUGUST 2016
RINGWOOD MINES/LANDFILL SUPERFUND SITE
COMPARISON TO FW2 SURFACE WATER STANDARDS

Parameter	Result Units	NJSWQS mg/l	OB-02	OB-03	OB-04	OB-05	OB-06	OB-07	OB-12	OB-13
Aluminum Dissolved	mg/L	N/A	0.0135 U	0.0135 U	0.0135 U	0.0135 U	0.0135 U	0.0135 U	0.0135 U	0.0135 U
Antimony Dissolved	mg/L	0.0056	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U
Arsenic Dissolved	mg/L	0.000017	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U
Barium Dissolved	mg/L	2	0.0057	0.0034 J	0.0487	0.0183	0.0156	0.0178	0.002 J	0.0057
Beryllium Dissolved	mg/L	N/A	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U
Cadmium Dissolved	mg/L	0.0034	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U
Calcium Dissolved	mg/L	N/A	12.5	16.9	45.5	78.1	21.1	73.9	6.56	9.53
Chromium Dissolved	mg/L	0.092	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Cobalt Dissolved	mg/L	N/A	0.0015 U	0.0015 U	0.0015 U	0.0054	0.0091	0.0026 J	0.0015 U	0.0015 U
Copper Dissolved	mg/L	1.3	0.0018 J	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0031 J	0.0016 U
Cyanide, Total	mg/L	0.14	0.002 U	0.002 U	0.002 U	0.002 U	0.002 J	0.002 U	0.002 U	0.002 U
Iron Dissolved	mg/L	N/A	0.0491 U	0.0491 U	0.528	5.15	2.98	0.0491 U	0.0491 U	0.0491 U
Lead Dissolved	mg/L	0.005	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U
Magnesium Dissolved	mg/L	N/A	4.34	4.63	14	38.1	4.67	29.5	2.36	3.89
Manganese Dissolved	mg/L	N/A	0.003 U	0.003 J	1.47	2.49	0.749	2.67	0.003 U	0.003 U
Mercury Dissolved	mg/L	0.00005	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U
Nickel Dissolved	mg/L	0.5	0.0016 U	0.0016 U	0.0016 U	0.0018 J	0.0017 J	0.0016 U	0.0016 U	0.0016 U
Potassium Dissolved	mg/L	N/A	1.36	1.15	2.47	3.82	1.93	3.08	0.537	1.05
Selenium Dissolved	mg/L	0.17	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U
Silver Dissolved	mg/L	0.17	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 UJ	0.0015 U	0.0015 U	0.0015 U
Sodium Dissolved	mg/L	N/A	3.89	3.31	87.8	33.9	14.5	10.4	2.19	3.21
Thallium Dissolved	mg/L	0.00024	0.00031 U	0.00031 U	0.00031 U	0.00031 U	0.00031 U	0.00031 U	0.00031 U	0.00031 U
Vanadium Dissolved	mg/L	N/A	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U
Zinc Dissolved	mg/L	7.4	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U

Note: U indicates non-detect, J indicates estimated value.

TABLE 5
SUMMARY OF DETECTED ORGANIC COMPOUNDS IN PARK BROOK ADJACENT TO THE OCDA
AUGUST 2016
RINGWOOD MINES/LANDFILL SUPERFUND SITE

VOC Parameter	Result Unit	NJSWQS ug/l	SW-PAB-01A	SW-PAB-02
1,2-Dibromo-3-Chloropropane	ug/l	N/A		
Acetone	ug/l	N/A	5.8 B	7.9 B
Benzene	ug/l	0.15		
Chloroethane	ug/l	N/A		
Methylene Chloride	ug/l	2.5	0.53 J	
Toluene	ug/l	1300		
VOC Tentatively Identified Compounds (TICs)				
None				

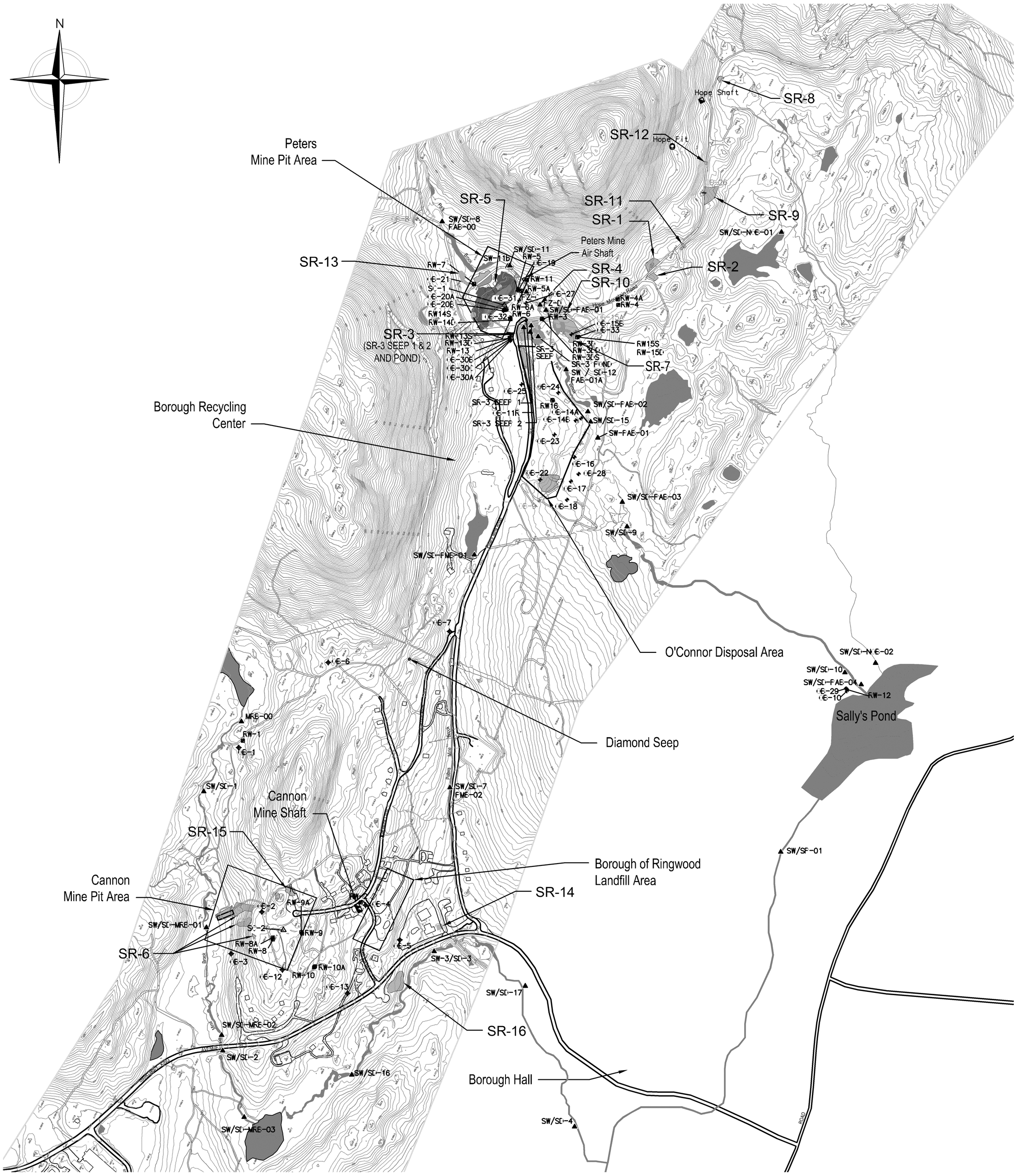
SVOC Parameter	Result Unit	NJSWQS ug/l	SW-PAB-01A	SW-PAB-02
1,4-Dioxane	ug/L	N/A	2.32	1.2
Bis(2-ethylhexyl) phthalate	ug/l	1.2		3.2
Di-n-butyl phthalate	ug/l	2000		2.8 UB
SVOC Tentatively Identified Compounds (TICs)				
None				
PCBs				
None				

Note: J indicates estimated value, B indicates detected in blank, U indicates non-detect

TABLE 6
SUMMARY OF METALS AND CYANIDE IN PARK BROOK ADJACENT TO OCDA
AUGUST 2016
RINGWOOD MINES/LANDFILL SUPERFUND SITE

Parameter	Result Unit	NJSWQS ug/l	SW-PAB-01A	SW-PAB-02
Aluminum	mg/L	N/A	0.0135 U	0.026 J
Aluminum Dissolved	mg/L	N/A	0.0135 U	0.0135 U
Antimony	mg/L	0.0056	0.00076 U	0.00076 U
Antimony Dissolved	mg/L	0.0056	0.00076 U	0.00076 U
Arsenic	mg/L	0.000017	0.00071 U	0.00071 U
Arsenic Dissolved	mg/L	0.000017	0.00071 U	0.00071 U
Barium	mg/L	2	0.0702	0.103
Barium Dissolved	mg/L	2	0.0638	0.0842
Beryllium	mg/L	0.006	0.00029 U	0.00029 U
Beryllium Dissolved	mg/L	0.006	0.00029 U	0.00029 U
Cadmium	mg/L	0.0034	0.00072 U	0.00072 U
Cadmium Dissolved	mg/L	0.0034	0.00072 U	0.00072 U
Calcium	mg/L	N/A	26.5	28.1
Calcium Dissolved	mg/L	N/A	27.3	28.2
Chromium	mg/L	0.092	0.0015 U	0.0015 U
Chromium Dissolved	mg/L	0.092	0.0015 U	0.0015 U
Cobalt	mg/L	N/A	0.0015 U	0.0015 U
Cobalt Dissolved	mg/L	N/A	0.0015 U	0.0015 U
Copper	mg/L	1.3	0.0016 U	0.0016 U
Copper Dissolved	mg/L	1.3	0.0016 U	0.0016 U
Cyanide, Total	mg/L	0.14	0.002 U	0.002 U
Iron	mg/L	N/A	3.87	5.79
Iron Dissolved	mg/L	N/A	0.0491 U	0.182
Lead	mg/L	0.005	0.00044 U	0.00044 U
Lead Dissolved	mg/L	0.005	0.00044 U	0.00044 U
Magnesium	mg/L	N/A	5.02	4.79
Magnesium Dissolved	mg/L	N/A	5.06	4.61
Manganese	mg/L	N/A	1.31	1.8
Manganese Dissolved	mg/L	N/A	1.24	1.11
Mercury	mg/L	0.00005	0.00014 U	0.00014 U
Mercury Dissolved	mg/L	0.00005	0.00014 U	0.00014 U
Nickel	mg/L	0.5	0.0016 U	0.0016 U
Nickel Dissolved	mg/L	0.5	0.0016 U	0.0016 U
Potassium	mg/L	N/A	1.69	1.64
Potassium Dissolved	mg/L	N/A	1.71	1.48
Selenium	mg/L	0.17	0.00079 U	0.00079 U
Selenium Dissolved	mg/L	0.17	0.00079 U	0.00079 U
Silver	mg/L	0.17	0.0015 U	0.0015 U
Silver Dissolved	mg/L	0.17	0.0015 U	0.0015 U
Sodium	mg/L	N/A	4.18	6.3
Sodium Dissolved	mg/L	N/A	4.25	6.48
Thallium	mg/L	0.00024	0.00031 U	0.00031 U
Thallium Dissolved	mg/L	0.00024	0.00031 U	0.00031 U
Vanadium	mg/L	N/A	0.0014 U	0.0014 U
Vanadium Dissolved	mg/L	N/A	0.0014 U	0.0014 U
Zinc	mg/L	7.4	0.0065 U	0.0066 J
Zinc Dissolved	mg/L	7.4	0.0065 U	0.0065 U

Note: U indicates non-detect, J indicates estimated value



NOTES:

1. MAP SOURCE: "SITE PLAN DEPICITING TOPOGRAPHIC FEATURES," RINGWOOD MINES/LANDFILL SITE, SITE RELATED GROUNDWATER REMEDIAL INVESTIGATION REPORT, MAP LATEST REVISION DATE 11/24/14.

LEGEND

- BEDROCK WELL
- DEEP BEDROCK WELL
- DIRECTIONAL WELL
- UNCONSOLIDATED WELL
- MONITORING WELL DAMAGED OR NOT AVAILABLE FOR SAMPLING
- APPROXIMATE LIMITS OF REMOVAL AREAS – SOIL, PAINT SLUDGE, AND DRUM REMNANTS
- APPROXIMATE LIMITS OF REMOVAL AREA – SOIL AND DRUM REMNANTS
- APPROXIMATE LIMITS OF REMOVAL AREA – SOIL, DRUMS, AND DRUM REMNANTS
- APPROXIMATE LIMITS OF REMOVAL AREAS – SOIL AND PAINT SLUDGE
- APPROXIMATE LIMITS OF SURFICIAL SOIL SCRAPING
- HISTORICAL FILL AREA SURROUNDING PETERS MINE PIT (AREA 1)
- INDICATES VERNAL CONDITIONS TYPICALLY OBSERVED IN THE SPRING AND FALL SEASONS
- WATER BODY
- SW/SC-2 ▲ SURFACE WATER AND SEDIMENT – SAMPLE LOCATION
- SW/SC-MRE-01 ▲ SURFACE WATER AND SEDIMENT – SAMPLE LOCATION FROM MINE BROOK
- SW/SC-FME-01 ▲ SURFACE WATER AND SEDIMENT – SAMPLE LOCATION FROM PETERS MINE BROOK
- SW/SC-NFE-01 ▲ SURFACE WATER AND SEDIMENT – SAMPLE LOCATION FROM NORTH BROOK
- SW/SC-FAE-01 ▲ SURFACE WATER AND SEDIMENT – SAMPLE LOCATION FROM PARK BROOK
- TRAIL/ DIRT ROAD
- STREAM
- INFERRED STREAM

400 200 0 400 800 1200

SCALE: 1"=400'

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE 03/17

DRAWN BY _____ CHECKED BY _____

DESIGNED BY _____ APPROVED BY _____

cornerstone environmental

PREPARED BY:
CORNERSTONE ENGINEERING GROUP, LLC

RINGWOOD MINES/LANDFILL SUPERFUND SITE
RINGWOOD, NEW JERSEY
GROUNDWATER SURFACE WATER & MINE WATER SAMPLING

SAMPLING LOCATIONS PLAN

SHEET NO. 1

PROJECT NO. 150648